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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,386	03/26/2004	Herbert Hartgrove	03-336	8629
62753	7590	09/04/2007		
VALERIE CALLOWAY CHIEF INTELLECTUAL PROPERTY COUNSEL POLYMER GROUP, INC. 9335 HARRIS CORNERS PARKWAY SUITE 300 CHARLOTTE, NC 28269			EXAMINER STEELE, JENNIFER A	
			ART UNIT	PAPER NUMBER
			1771	
			MAIL DATE	DELIVERY MODE
			09/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/810,386

Applicant(s)

HARTGROVE ET AL.

Examiner

Jennifer Steele

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/08)
- Paper No(s)/Mail Date 8/1/2007; 8/23/2007
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/01/2007 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claim 5-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Mater et al (WO 2003023108 referenced as US 2004/0198125) in view of Kierulff (US 6,660,503)

in further view of Kelly (US 2002/0004348). Mater teaches nonwoven flame barrier fabrics (ABST). Mater teaches preferred fiber blends are designed to withstand extended periods of time exposed to flame (ABST). Mater teaches that optionally, natural fibers can be included to improve product economics (ABST). Mater teaches categories of fibers with respect to flame resistance and properties. Mater teaches category 1 fibers that are inherently fire resistant and resistant to shrinkage by a direct flame. Category 1 fibers include melamines, meta-aramids, para-aramids, polyamideimides [0068]. Category 2 fibers are made from polymers with halogenated monomers and include modacrylics [0072]. Category 3 fibers include low melt binders. Category 4 fibers include the natural fibers such as cotton, wool, silk. Category 5 fibers include non-flame retardant fibers that are synthetic and Category 6 fibers are halogenated binder resins [0075-0086]. Mater teaches blends of fibers, preferably to combine category 1 and 2 (para amids and modacrylics) because of synergistic charring effect [0094]. Mater teaches that one layer can be designed to provide emphasis of category 1 fibers and another layer to provide emphasis of category 2 fibers. Mater teaches percentages of the categories of fibers, category 1: 10-85% more preferably 30-60%, category 2: 10-85%, more preferably 30-60%, category 3: 0-30%, more preferably 10-20%, category 4: 0-40%, more preferably 10-20%, category 5: 0-40%, more preferably 10-20%, category 6: 0-40%, more preferably 10-20% [0087-0092]. Mater teaches blending of flame retardant fibers overcome disadvantages of previous fibers for example, hydroentangled nonwoven spunlace flame barriers containing significant amounts of p-aramid fibers impart a yellow color [0014]. Mater teaches a

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layered quilting panel that has a 1st, 2nd, 3rd, 4th and 5th layer of various blends of flame retardant fibers in the examples [0122-0135]. Mater differs from the current application and does not teach a lyocell fiber and Mater differs from the current application and does not teach hydroentangling layers together.

Kelly teaches a hydroentangled nonwoven flame-retardant fabric consisting of a blend of melamine and aramid fibers. Kelly teaches a three dimensionally image transfer device for formation of the fabric (ABST). Kelly teaches this provides a fabric with air permeability and thermal protective properties. Kelly specifically teaches that while heat and flame resistant properties of aramid fibers are well known, fabrics produced using aramid fibers a heavy in weight and low in air permeability (col 2, lines 54-64). Kelly teaches blending the aramid fibers with melamine fibers and use of three dimensional image transfer device to overcome the disadvantages of aramid fibers while still producing a flame retardant fabric.

Kierulff '503 teaches the advantages of cellulose derived fibers, composites and blends and their improved properties including flame retardant with increased softness. (col 3, line 43-45 and col 6 line 66). Kierulff teaches cellulose derived fibers are natural fibers including lyocell, flax, ramie, viscose (rayon) and cotton (col. 6, lines 63-67). Kierulff teaches that a natural fiber of lyocell could be substituted for a synthetic fiber or a natural fiber in order to achieve the improved properties that include being naturally flame retardant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a fiber blends in the ranges of Mater motivated to reduce the

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yellowing of a para amid fiber and maintain the flame retardant properties of the fabric. It would have been obvious to employ a layered blend motivated incorporate a synergistic advantages of different type of flame retardant fibers. It further would have been obvious to select a method of three dimensional image transfer device and hydroentangling the layers motivated by Kelly to produce a fabric with air permeability and fire resistance.

Response to Arguments

2. Applicant's amended claims, and the 35 USC 112 rejections with respect to the term "sufficiently absent" and "in a directly adjacent hydroentangled united arrangement" have been withdrawn. The 35 USC 112 rejection of the term has been withdrawn.

3. Applicant's arguments with respect to claim 5-12 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that Paire does not teach the same materials and structure as the current application. Paire is not relied upon for teaching the structure of the fabric however is relied upon for teaching the feature of a flame retardant fiber blend of a modacrylic, aramid and other FR and natural fibers. The current application claims blends of FR fibers and natural fiber being lyocell. Examiner agrees that lyocell is not taught by Paire, however Paire teaches natural fibers and Kierulff is relied on to teach that lyocell is a natural fiber and it would have been obvious to substitute the natural fiber of Paire with lyocell.

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4. With respect to the argument that Paire does not teach masking the discoloration of a para amid fiber, a new grounds of rejection based on Mater is included that teaches the need to mask the discoloration of the para amid fibers. Paire does not teach that there is discoloration with para amid fibers, however Paire teaches blends of fibers. While Paire does not disclose a reason for blending the fibers is to reduce yellowing, that does not exclude the outcome that the fiber blends of Paire have could have reduced yellowing.

5. Applicant's arguments and information concerning the use and composition of lyocell has been considered. Kierulff teaches lyocell is a natural based fiber and has flame retardant properties. Reliance of this of this reference is intended as support for the use of lyocell as a substitute for the natural fibers that are used in the blends of fibers of Mater. While Kierulff teaches that natural fibers are flame retardant it is not a prerequisite fact to using Kierulff reference to lyocell. If the lyocell of the current application is different than the lyocell of Kierulff, then the argument is not commensurate with the scope of the claims as lyocell is described.

With respect to Applicant's arguments that there is no suggestion of motivation to combine, the rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

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KSR forecloses the argument that a specific teaching, suggestion, or motivation is required to support a finding of obviousness. See the recent Board decision *Ex parte Smith*, --USPQ2d--, slip op. at 20, (Be. Pat. App. & Interf. June 25, 2007) (citing KSR, 82 USPQ2d at 1396) (available at <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd071925.pdf>).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Steele whose telephone number is (571) 272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1771

8/20/2007

